

IN THE CLAIMS:

The following listing replaces all prior versions of the claims.

1. (Currently amended) A method for enhancing the mobilization of multilineage early CD34 positive hematopoietic stem cells to peripheral blood, ~~comprising~~ consisting of the step of administering to a subject receiving ~~irradiation or~~ chemotherapy or suffering from hematological disorder, an effective amount of an oligopeptide consisting of the amino acid sequence of any one of Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOS:1, 2, 3 and 4 respectively, or of a pharmaceutical composition comprising the same.
2. (Canceled)
3. (Currently amended) The method according to claim 1, wherein said circulating multilineage early CD34 positive stem cells are double positive CD34/Flk2 cells.
4. (Previously presented) The method according to claim 1 wherein said oligopeptide is a pentapeptide consisting of the formula: Tyr-Gly-Phe-Gly-Gly, as denoted by the amino acid sequence of SEQ ID NO:1.
5. (Withdrawn) The method according to claim 1, wherein said oligopeptide is a pentapeptide consisting of the formula: Tyr-Gly-Phe-His-Gly, as denoted by the amino acid sequence of SEQ ID NO:2.
6. (Withdrawn) The method according to claim 1, wherein said oligopeptide is a tetrapeptide consisting of the formula: Gly-Phe-Gly-Gly, as denoted by the amino acid sequence of SEQ ID NO:3.
7. (Withdrawn) The method according to claim 1, wherein said oligopeptide is a hexapeptide consisting of the formula: Ac-Met-Tyr-Gly-Phe-Gly-Gly, as denoted by the amino acid sequence of SEQ ID NO:4.

8. (Currently amended) The method according to claim 1, wherein enhancing the mobilization of multilineage early CD34 positive stem cells results in ~~for enhancement of the number of circulating multilineage early CD34 positive stem cells~~ ~~comprising the step of administering to~~ in a subject receiving ~~irradiation or~~ chemotherapy or suffering from hematological disorder, ~~an effective amount of an oligopeptide consisting of the amino acid sequence of any one of Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs:1, 2, 3 and 4 respectively, or of a pharmaceutical composition comprising the same.~~
9. (Currently amended) The method according to claim 8, wherein said subject ~~in need thereof~~ is a patient receiving chemotherapy.
10. (Currently amended) The method according to claim 9 ~~any one of claims 1 and 8~~, wherein said patient receiving chemotherapy ~~subject~~ suffers from any one of hematological disorders, solid tumors, immunological disorders and aplastic anemia.
11. (Currently amended) The method according to claim 1 or claim 10, wherein said hematological disorder is selected from the group consisting of lymphomas, leukemias, Hodgkin's diseases and myeloproliferative disorders.
12. (Canceled)
13. (Currently amended) A method for enhancing the selective proliferation of CD34 positive hematopoietic stem cells in a subject receiving ~~irradiation or~~ chemotherapy or suffering from hematological disorder, ~~comprising~~ consisting of the step of administering to a subject in need thereof, an effective amount of an oligopeptide consisting of the amino acid sequence of any one of Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs:1, 2, 3 and 4 respectively, or of a pharmaceutical composition comprising the same.

14. (Currently amended) The ~~use~~ method according to claim 13, wherein said CD34 positive cells are double positive CD34/Flk2 cells.
15. (Currently amended) A method for selectively increasing the number of any one of the BFU-E and GEMM colony forming units (CFU), ~~comprising~~ consisting of the step of administering to a subject receiving ~~irradiation or~~ chemotherapy or suffering from hematological disorder, an effective amount of an oligopeptide consisting of the amino acid sequence of any one of Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs:1, 2, 3 and 4 respectively, or of a pharmaceutical composition comprising the same.
16. (Previously presented) The method according to any one of claims 13 and 15, wherein said subject is a patient receiving chemotherapy.
17. (Currently amended) The method according to claim ~~16~~ 15, wherein said subject receiving chemotherapy suffers from any one of hematological disorders, solid tumors, immunological disorders and aplastic anemia.
18. (Currently amended) The method according to ~~claim~~ any one of claims 13, 15 and 17, wherein said hematological disorder is selected from the group consisting of lymphomas, leukemias, Hodgkin's diseases and myeloproliferative disorders.
19. (Original) A method for enhancing the number of any one of the BFU-E and GEMM colony forming units (CFU) comprising exposing in vitro said cells to an effective amount of an oligopeptide ~~comprising~~ consisting of the amino acid sequence Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs:1, 2, 3 and 4 respectively, or of a composition comprising said oligopeptide as an effective ingredient.

20. (Currently amended) A method of treating a subject suffering from any one of hematological disorders, solid tumors, immunological disorders and aplastic anemia~~[[,]]~~ or a subject suffering of any one of said disorders and receiving chemotherapy, by enhancing the mobilization of multilineage early CD34 positive stem cells to peripheral blood, wherein said method consisting the step of ~~comprising~~ administering to said subject a therapeutically effective amount of an oligopeptide having stimulatory activity on hematopoietic cells and consisting of the amino acid sequence Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs:1, 2, 3 and 4 respectively, or of a composition comprising said oligopeptide as an effective ingredient.
21. (Currently amended) ~~[[A]] The method according to claim 20, wherein said treatment is of treating a subject suffering from any one of hematological disorders, solid tumors, immunological disorders and aplastic anemia, comprising administering to said subject a therapeutically effective amount of an oligopeptide having stimulatory activity on hematopoietic cells and consisting of the amino acid sequence Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs:1, 2, 3 and 4 respectively, or of a composition comprising said oligopeptide as an effective ingredient,~~ in support of the treatment of the subject by bone marrow transplantation.
22. (Currently amended) The method according to claim 20 or 21, wherein said hematological disorder is any one of a lymphoma, leukemia, Hodgkin's disease and myeloproliferative disorder.
23. (Currently amended) A method of treating a subject suffering from a myeloproliferative disorder~~[[,]]~~ by enhancing the mobilization of multilineage early CD34 positive stem cells to peripheral blood, wherein said method consists of the step of ~~comprising~~ administering to said subject a therapeutically effective amount of an oligopeptide consisting of the amino acid sequence of any one of Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly

and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs:1, 2, 3 and 4 respectively or of a composition comprising said oligopeptide as an effective ingredient.

24. (Original) The method according to claim 23, wherein said myeloproliferative disorder is idiopathic myelofibrosis (IMF).
25. (Canceled)
26. (Currently amended) A method for enhancing the proliferation of hematopoietic CD34 positive cell stem cells ~~comprising~~ consisting of the step of exposing said cells *in vitro* to an effective amount of an oligopeptide consisting of the amino acid sequence of any one of Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs:1, 2, 3 and 4 respectively, or of a composition comprising said oligopeptide as an effective ingredient.
27. (Original) The method according to claim 26, wherein said CD34 positive cell is a Flk2 positive cell.
28. (Currently amended) A method for the preparation of a peripheral blood stem cell transplant for the treatment of a subject receiving chemotherapy or suffering from a hematological disorder, in need thereof comprising the step of administering to a donor an effective amount of an oligopeptide consisting of the amino acid sequence of any one of Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs:1, 2, 3 and 4 respectively, or of a composition comprising said oligopeptide as an effective ingredient, thereby enhancing the mobilization of hematopoietic CD34 positive stem cell to the peripheral blood of said donor and obtaining from said donor a sufficient amount of peripheral blood CD34 positive stem cells.
29. (Canceled)

30. (Currently amended) A method for enhancement of engraftment of bone marrow transplants, hemopoietic reconstruction, bone marrow re-population and number of circulating CD34 positive stem cells in ~~patients~~ a patient receiving chemotherapy or suffering from a hematological disorder, which method comprises the step of administering to any one of said patient or any cell obtained from said patient, an effective amount of an oligopeptide having stimulatory activity on hematopoietic cells and consisting of the amino acid sequence of any one of Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs:1, 2, 3 and 4 respectively, or of a composition comprising said oligopeptide as an effective ingredient.
31. (Canceled)
32. (Canceled)
33. (Currently amended) The method according to claim ~~30~~ 32, wherein said multilineage stem cells are the circulating early precursor double positive CD34/Flk2 cells.
34. (Currently amended) The method according to claim ~~30~~ 29, wherein said oligopeptide enhances the immature cell and monocyte recovery.
35. (Currently amended) The method according to claim ~~30~~ 29, wherein said oligopeptide selectively increases any one of the BFU-E and GEMM colony forming units (CFU).
36. (Currently amended) The method according to claim ~~30~~ 29, for supporting bone marrow transplantation by increasing proliferation of circulating CD34 positive stem cells, accelerating the hematological reconstruction upon bone marrow transplantation and increasing the cellularity of bone marrow.
37. (Currently amended) ~~[[A]]~~ The method according to claim 30 for reducing acute transplant rejection in a transplanted patient, ~~comprising administering to said patient an effective~~

~~amount of an oligopeptide having stimulatory activity on hematopoietic cells and consisting of the amino acid sequence Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs: 1, 2, 3 and 4 respectively, or of a composition comprising said oligopeptide as an effective ingredient.~~

38. (Withdrawn) A method for *in vitro* and/or *ex vivo* maintaining and/or expanding stem cell population in a blood sample comprising isolating peripheral blood cells from said blood sample, enriching blood progenitor cells expressing the CD34 antigen, cluturing the enriched blood progenitor cells under suitable conditions, treating said cells with an oligopeptide consisting of the amino acid sequence of any one of Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs: 1, 2, 3 and 4 respectively or with a composition comprising said oligopeptide as an effective ingredient.
39. (Withdrawn) The method according to claim 38, wherein said cells are in cell culture.
40. (Withdrawn) The method according to claim 38, wherein said blood sample is mammalian blood sample.
41. (Withdrawn) The method according to claim 40, wherein said blood sample is a human blood sample.
42. (Withdrawn) The method according to claim 40, wherein said blood sample originates from a mammal suffering from, or susceptible to decreased blood cell counts.
43. (Withdrawn) The method according to claim 42, wherein said decreased blood counts are caused by chemotherapy, irradiation therapy, or bone marrow transplantation therapy.
44. (Withdrawn) The method according to claim 43, wherein said composition further comprises at least one cytokine.

45. (Withdrawn) The method according to claim 44, wherein said cytokine is selected from the group consisting of TPO (Thrombopoietin), EPO (Erythropoietin), M-CSF (Macrophage-colony stimulating factor), GM-CSF (Granulocyte-macrophage-CSF), G-CSF (Granulocyte CSF), IL-1 (Interleukin-1), IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, LIF (Leukemia inhibitory factor) and KL (Kit ligand).
46. (Currently amended) A method for re-populating blood cells in a ~~mammal~~ subject receiving chemotherapy or suffering from hematological disorder by enhancing the mobilization of multilineage early CD34 positive stem cells to peripheral blood, comprising administering to said ~~mammal~~ subject a therapeutically effective amount of an oligopeptide having stimulatory activity on hematopoietic cells and consisting of the amino acid sequence of any one of Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs:1, 2, 3 and 4 respectively, or of a composition comprising said oligopeptide as an effective ingredient.
47. (Original) The method of claim 46, wherein said blood cell is any one of erythroid, myeloid and lymphoid cells.
48. (Currently amended) A method for increasing the number of white blood cells, circulating hematopoietic stem cells, and overall bone marrow cellularity in a subject receiving chemotherapy or suffering from hematological disorder, by enhancing the mobilization of multilineage early CD34 positive stem cells to peripheral blood of said subject, comprising administering to said subject a therapeutically effective amount of an oligopeptide having stimulatory activity on hematopoietic cells and consisting of the amino acid sequence of any one of Tyr-Gly-Phe-Gly-Gly, Tyr-Gly-Phe-His-Gly, Gly-Phe-Gly-Gly and Met-Tyr-Gly-Phe-Gly-Gly as denoted by SEQ ID NOs:1, 2, 3 and 4 respectively, or of a composition comprising said oligopeptide as an effective ingredient.